



STUDENT'S PERCEPTION AND APPRAISAL OF TEACHING METHODS IN HISTOPATHOLOGY MICROSCOPY SLIDE IN PRACTICAL SESSIONS- A NEED FOR IMPACT IN DELIVERING METHODS

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ABSTRACT

Background: Medical education includes three major objective like educational objectives, Teaching-Learning methods and Evaluation. While cognitive domain is assessed in lectures psychomotor domain plays a crucial role especially among the second year MBBS students. Practical sessions in Para-clinical especially in Pathology discipline is dynamic which covers recalling capacity and reproducibility which is time bounded. Having similarities with normal histology in first year with varying proportions, many studies had been conducted to assess the best mode of teaching tool in histopathology slide sessions in pathology practical classes.

Aims & Objective: To assess the preferable teaching modality among students for histopathology slide teaching for second year MBBS students in pathology practical sessions.

Results: Overall 150 students participated for giving opinion in standard format questionnaire. Majority of students sixty eight percent preferred for conventional method of teaching with self - directed learning for histopathology slide visualization. Interestingly students preferred AV mode of teaching for studying normal histology in anatomy practicals. The reasons were analyzed in reference to standard textbooks and Literature analysis.

Conclusion: The present re-emphasized that judicious use of teaching tools and combination is more appreciated by students. Among second MBBS students, visualization and perception in practical classes with respect to histopathology slide viewing sessions, conventional method seems to be the preferable mode in aspect knowledge, self-directed learning and reproducibility during exams. Optimal use of AV aids plays an integral role in deriving desired benefits.

KEY WORDS: AV aids, Conventional teaching, Histopathology slide sessions, Teaching methods.

INTRODUCTION:

A Medical college set up in India is an education institution that caters medical, community related teaching and training covering all aspects of patients care.^[1] Teaching medical students involves sharing knowledge and assessing the competency which includes domains like cognitive, psychomotor and affective domains.^[2] This can be done by didactic lectures or practical hands on teaching. The term "lecture" is derived from Latin terminology which stands for "oral disclosure on a given subject or topic before a group of audiences". While lecturing process mainly deals with cognitive domain, practical sessions are the mainstay of teaching mode to enrich the psychomotor domain of the students.

Medical teachers have conventionally applied various teaching modalities to educate the students in practical sessions formerly dominated by blackboard and replaced by audio visual aids^[4] Didactic lectures in second year MBBS curriculum plays a crucial role of undergraduate medical training which covers basic sciences and clinical aspects as well. While a lecture class mainly facilitates large groups, practical sessions are covered in small group teaching which includes questions, group tasks and interactions.^[5] It encourage two way communication aiding to apply the theoretical knowledge and communication skills.^[3,5]

Pathology being a crucial subject among Para-clinical discipline, it covers histology and table exercises.^[4,2] Anatomic Pathology being an integral part of the subject, encompassing microscopy as well as gross specimens. Microscopy part is similar to histology covered in first year of the curriculum in anatomy. Student's perception with respect to microscopic observation varies widely which often warrants clinic-pathological correlation.^[6]

The formal discussion in adjunction with well-structured demonstration has been the most successful teaching method in anatomic pathology practical classes.^[4] However microscopy visualization of slides, majority of students tend to get only limited time period which is usually countered usually by power-point projection of slides, photomicrographs etc. These methods have their own limitations especially with quality of slides and procedure during examinations. Delivering a pre-briefing lecture is better utilized by audio-visual aids (AV aids) and it was the most preferred choice among the students.^[7,8]

However with regard to microscopic evaluation of slides, the reliability of observation and its subsequent reproducibility in practical exams is always debatable. Previous studies had been conducted by Researchers to analyze the best methods for understanding and visualization of microscopic slides in practical pathology classes which showed varied response and results among the students^[9] Few

analysis proved that, large proportions of students feel that integration of teaching modes will enhance the observing skills of the microscopic slides.^[9]

Practical examinations are usually assessed to test the psychomotor domain but being a unique of its kind, microscopic slide seeing in anatomic pathology is used to test the cognitive domain as well.^[10] Each discipline follows its own mode of sequence with specific learning outcomes. The present study was designed to know the preferred teaching aids among the Para clinical students in microscopic slides session in pathology practical classes with a novel aim to evaluate the students perception regarding the use of various teaching modalities.^[9,10]

MATERIALS AND METHODS:

The cross-sectional study was carried out among the students of second year professional at Department of Pathology, Mahatma Gandhi Medical College & Research Institute in a questionnaire format which is pre-coded, pre-structured and pre tested in reference to standard analysis done before during the practical classes. With all ethical clearances, the students were encouraged to furnish their own unbiased independent opinion to complete the questionnaires. The students were instructed to opt for most appropriate teaching aids for each item and to document their overall opinion. No personal identification was obtained. Overall 150 students participated and given their opinion. Students who were absent on the day of assessment were excluded from the study and were instructed not to skip any questions giving provisions to instant clarifications. The students were asked to answer independently and clearly and to encircle the appropriate answers wherever warranted as per format from previous references.^[9]

RESULTS AND OBSERVATIONS:

A total number of 150 students out of 175 [response rate-86%] participated and in the study and answered all the questions. The students' responses rating various attributes of the practical teaching sessions were sought out and the appropriate statistics were sought out using Microsoft Excel sheet. Ninety five percent of the students had their schooling in English medium with good exposure to Audio-visual aids in practical sessions. All the participated unanimously agreed to the fact that AV aids is essential for practical sessions in the briefing and demonstration part. Ninety percent of students emphasized that AV aids help them in interaction and self-motivation. With regard to microscopy slide viewing of histology sections, students had varied opinion in multiple aspects in equal proportions. Small group teaching was the most preferred method for listening and black-board demonstration followed by individual microscopic visualization was the best mode for understanding a particular histology slide rather than power point projections [PPT]. While students prefer AV aids [PPT] teaching followed by

black-board teaching of diagrams as the best mode in anatomy slide session, combination of these method proved to be useful in anatomic pathology. The results of second MBBS student's preference interpretation of histopathology slides in practical sessions are tabulated in Table 1. Ninety percent of students said that the scope of application of the knowledge gained and its memorizing capacity was very good on individual microscopic mode of visualization. Eighty five percent of students expressed that maximum attention span to analyze the slide and recall the diagnostic points taught was much higher in normal histology [I year anatomy practicals] than in histopathology [II year pathology practicals]. Interestingly, when asked the same questions to the same set of students regarding experience in normal histology slide in first year, the results seem to be unequivocal. A comparative analysis between anatomic histology and histopathology slide session was given in Table-2 where it is evident that AV aids is more effective than conventional system. Also students voted that self-directed learning in practical sessions made them to stimulate for further readings and application in subsequent clinical aspects.

Table 1: Student's preference of AV Aids Vs. Conventional methods in Histopathology slide

Preferred methods	**Conventional Method % (n)	AV aids % (n)
Visual observation	68% (102)	32% (48)
Better perception of diagrams	65.5% (99)	34.5% (51)
Better perception of listening and understanding	72.5% (110)	27.5% (40)
Most preferred and convenient method of slide visualization	115% (75.5)	24.5% (35)

**Conventional Method: Individual slide visualization on light microscope

Table 2: Comparison of student's perception between Histology Vs. Histopathology slides in practical sessions

Preferred method	First year Histology in Anatomy Practical % (n)	Second year Histopathology Pathology Practical % (n)
Conventional method	27.5% (40)	72.5% (115)
AV aids	73.5% (110)	26.5% (35)

Table 3: Comparison of results of present study with prior similar research studies in %

Preferred methods in Histopathology slide sessions in II MBBS	Mohan et al, %	Kumar et al, %	Hemalatha et al %	Present study %
Conventional methods	68.5%	71.7%	74.6%	72.5%
AV Aids	32.5%	24.6%	22.5%	26.5%

DISCUSSIONS:

Medical education principles and mode of training widely varies across the universe. Teaching is a global phenomenon and various teaching methodologies have been deployed in medical curriculum which serves as an active platform for research in educational science [7,9,10]. While a lecture class involving large group teaching mainly arouses the basic ideologies on the content, it is the practical classes that helps the students to improve their psychomotor and affective domain. In precise, theoretical classes makes the student's interaction more passive but practical periods caters for active interaction. This enhancement helps in application of skills clinically and social based community. [11]

The major purpose of conducting practical sessions in Para-clinical subjects is to understand the basic concepts of disease process, its mechanism and mode of presentations. [11,12] Pathology being a crucial and vast subject among the second year MBBS syllabus, it helps in better understanding of clinical manifestations thereby aiding to treatment modalities of the diseased condition. It includes General pathology dealing with basic pathogenesis of diseases, hematology dealing with blood disorders and histopathology which is the mainstay of the subject mainly concerns with systemic pathological disease of organ systems. [12]

In histopathology practical teaching and learning, a majority of time and man power in invested in understanding the microscopic alterations in tissue morphology of the affected organ, an average student fails to make better correlation between the cellular pathology he observes under light microscope and the written context in the text books. Only handful of observational memory and clues makes a connection between the study and reproducibility in slide examination which is time bounded. [12,13]

In the present study, in histopathology practicals, majority of students favored that small group teaching in adjunction with individual conventional method of

slide viewing is the best modality than AV aids teaching. Few students opted of combination of aids. The present observation and ratio is in concordance with prior research studies as tabulated in Table-3.

While the same batch of students feel vice versa (ie), AV aids to be more superior than conventional system as of normal anatomic histology slide viewing sessions as observed in Table-2. These observations are also in concordance with prior research studies performed by Mohan et al [9] which states that combination of system is better preferred between pre and Para clinical subjects.

While teaching is an art by judicious use of best teaching aids, making the students understand, remember and reproduce well enough thereby improving their academic performances. [14] The reason attributed for the observations in the present study is that the perceptions of microscopic picture is well absorbed with self directed learning which is feasible in conventional system [15]. Review of Literature suggests that understanding of topics in practicals is best possible with conventional systems with facilitators serving a guide role [16]. This also stimulates their further reading capability and applications as proved in the present as well as previous studies.

As a well-known fact, visual and verbally presented content and information holds upper hand over simple verbal information for both immediate and long term recall. [9,12] Similarly in the present study, majority of students feel that AV aids is a better tool in normal histology which turns to be contradictory in second histopathology slides session [14]. This is because the gap between basic sciences taught at the beginning of medical curriculum as a fresher is more of "active learning" of the slides and when it comes to clinic-pathological application, self directed conventional methods stimulates the student for further deep reading and reproducing the matter later [15]. Similar findings were observed prior studies and in concordance with present studies [16]

Thus during didactic teaching sessions, the correlations between normal anatomy slides and histopathological alterations by disease are to be emphasized by combination of aids while the former prefers AV aids and latter opts for conventional methods of slide viewing.

CONCLUSION:

Medical education system is a dynamic process based on standard framed curriculum with varied parameters involving effective mode of Teaching - Learning methodologies. The present study proved that judicious use of teaching tools and combination is more appreciated by students. Among second MBBS students, visualization and perception in practical classes with respect to histopathology slide viewing sessions, conventional method seems to be the preferable mode in aspect knowledge, self-directed learning and reproducibility during exams. Optimal use of AV aids plays an integral role in deriving desired benefits. The present aids in application of further in depth analysis to be undertaken in large groups to develop more understandability. It is evident from the student's opinion that adjunction of AV aids with conventional system as a part of self-directed learning is more effective in histopathology slide teaching sessions.

Acknowledgement:

Heartful thanks to students for willing participation in this study for making it more valuable for future scope of improvement.

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